

REMARKS

Claims 2-7, 10, 11 and 18 have been amended. Claim 17 has been canceled without prejudice and disclaimer. Claim 8 was previously canceled. Claims 1, 3-7 and 9 have been allowed over the prior art of record, and claims 15,16,17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Subsequent to the entry of the present amendment, claims 1-7, 9-16 and 18-19 are pending. The amendments were made in response to the suggestions in the Office Action, hence no new matter has been added.

In view of the amendments and below remarks, it is submitted that the claims are in condition for allowance, and a notice to that effect is respectfully requested.

I. Amendment to the Claims

Claims 2, 10, 11 and 18 have been amended to recite:

2. A solder composition according to claim 1, wherein the about 25% to 92% by weight gold further comprises a mixture of about 8% to 75% silver, about 1% to 66% copper, about 5% to 31% zinc and about 0% to 35% nickel.

10. An alloy for lowering the melting point of a gold solder comprising gallium, indium and copper in a respective weight ratio of approximately 6:3:1, wherein the alloy is about 2% to 14% by weight of the solder, wherein the solder has a reduced melting temperature as compared to a solder not having the alloy, and wherein the alloy and the solder are free of palladium.

11. The gold solder according to claim 18, wherein the gold solder further comprises a mixture of about 8% to 80% silver, about 1% to 66% copper, about 5% to 31% zinc and about 0% to 35% nickel.

18. A gold solder composition comprising about 25% to 92% by weight gold and about 2% to 14% by weight of an alloy for lowering the melting point of the solder, wherein the alloy comprises gallium, indium and copper in a respective weight ratio of approximately 6:3:1, and wherein the solder has a melting temperature in the range of about 1000°F to 1550°F.

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The claims were amended per the suggestions on page 2 of the Office Action and to clearly define the metes and bounds of the invention. The specific amendments are also discussed in more detail below. The amended claims are fully supported by the specification and original claims.

The amendments do not add new matter.

II. Rejection under 35 U.S.C. §112, Second Paragraph

Claims 2, 10, 11 and 18 are rejected under 35 U.S.C. §112, second paragraph, as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse the rejection as it applies to the pending claims.

According to the Office Action, the following claims are indefinite for the following reasons (page 2 of the Office Action):

- a) In claim 10, line 3, it appears that the phrase "about 2% to 14% by weight" should be deleted, i.e. the alloy referred to in the preamble of the claim is not 2-14% of the recited elements, but rather 2-14% of the overall composition of the solder.
- b) In claims 2 and 11, it is unclear whether the copper defined in these claims is a part of the copper defined in the independent claims, or a separate component of the claimed composition. Further, the claims recites 8% to 80% silver, while the independent claims require a minimum of 25% gold and 2% other elements, and claims 2 and 11 also require a minimum of 5% zinc, so it is unclear how the 80% level could be attained in a manner consistent with the remainder of the claimed limitations.
- c) It appears that line 2 of claim 18 should be rewritten as "and about 2% to 14% by weight of an alloy for lowering the melting point of the solder comprising".

Claims 10, 2 and 11 and 18 have been amended as recited above. The above claims were amended per the suggestion of the Office Action (page 2). Claim 10 has been amended to recite that "the alloy is about 2% to 14% by weight of the solder", thus confirming that the alloy in the

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preamble is "2-14% of the overall composition of the solder" as stated by the Office Action (page 2). Also, claim 10 has been amended to recite that both the "alloy and the solder are free of palladium", which is discussed in more detail below.

Claim 2 has been amended to clearly recite that "the gold solder further comprises a mixture of about 8% to 75% silver, about 1% to 66% copper, about 5% to 31% zinc and about 0% to 35% nickel". Hence, the "copper" refers to the solder composition of claim 1 and not the alloy. Also, the silver content has been amended to correct the percentage, to recite, "8% to 75%".

Claim 11 has been amended to clearly recite that that it is the gold solder composition which further consists of a "mixture of about 8% to 80% silver, about 1% to 66% copper, about 5% to 31% zinc and about 0% to 35% nickel". Hence, the "copper" refers to the gold solder composition of claim 1, and not the alloy.

Claim 18 has been amended to clearly recite that the gold solder composition is "about 25% to 92% by weight gold *and* about 2% to 14% by weight of an alloy for lowering the melting point of the solder". Further, claim 18 has been amended to recite the temperature range of the gold solder composition, which is discussed further below.

Therefore, the amendments to the claims particularly point out and distinctly claim the subject matter which applicant regards as the invention and were made per the suggestion of the Office Action (page 2).

Accordingly, withdrawal of rejection of claims under 35 U.S.C. §112, second paragraph is respectfully requested.

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III. Rejection under 35 U.S.C. § 103(a)

Claims 10, 12, 13, 14 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nawaz (U.S. Patent 4,591,483). Applicants respectfully traverse this rejection as it applies to the pending claims.

According to the Office Action, Nawaz discloses alloys containing 20-65% gold, and which may further comprise gallium, indium and copper in amounts overlapping the amounts as defined in the instant claims. Nawaz does not disclose any specific examples having the Ga:In:Cu ratio as presently claimed. However, the composition as broadly recited in e.g. claim 1[0] of Nawaz overlaps the composition as presently claimed. *In view of the overlap*, the disclosure of Nawaz is held to create a prima facie case of obviousness of the presently claimed invention because Nawaz indicates that the prior art compositions possess utility over the entire range as claimed in the prior art patent. Compare *In re Malagari* (182 USPQ 549) (page 2-3 of the Office Action). Also, according to the Office Action, “[w]ith respect to dental alloys in Nawaz versus solder in the instant claims, this is held to be nothing more than a difference in intended use of the claimed materials, and does not define any difference between the actual compositions of the prior art and those of the instant claims (emphasis added; page 3 of the Office Action)”.

Claims 10, 12, 13, 14 and 18 have been amended as discussed above. Claim 10 is an independent claim and has been amended to recite that the “alloy and the solder are free of palladium”. This is not new matter as it is fully supported in the specification, for example: Solder compositions combining palladium and up to 75% by weight platinum have also been employed, but such compositions are characterized by high melting temperatures (1600 °C to 1700 °C) that are not significantly lower than the 1769 °C. melting temperature of platinum itself and make the compositions difficult to work with (paragraph [0009] of the specification). This argument was also presented in earlier filed responses (Amendment filed January 4, 2006).

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Nawaz discloses a composition having palladium (col. 2, lines 19, 25-26, 29-30, 56-57; Table 1 in col. 3; and claims 1-4 of Nawaz). Hence, the claimed invention is not rendered obvious over Nawaz because Nawaz discloses palladium containing compositions.

Claims 12, 13 and 14 depend on independent claim 18, which has been amended to recite a temperature range (1000°F to 1550°F; or 537.78 °C to 815.56 °C). Nawaz discloses in Table 1 temperature ranges of the “noble metal alloy”, which at ranges of from 1210-1165 °C, is significantly higher than that of the claimed invention. Again, the very high temperatures of Nawaz are due to the presence of palladium in their “noble metal alloy” compositions . Again, the amendments were made per the suggestions of the Office Action on page 2.

Accordingly, withdrawal of rejection of claims 1, 3-5 and 8-10 under 35 U.S.C. §103, first paragraph is respectfully requested.

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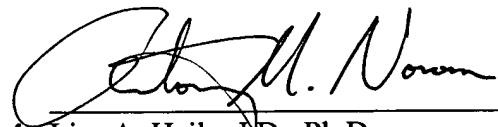
CONCLUSION

In view of the amendments and above remarks, it is submitted that the claims are in condition for allowance, and a notice to that effect is respectfully requested. The Examiner is invited to contact Applicant's undersigned representative if there are any questions relating to this application.

No fee is deemed necessary in connection with the filing of this paper. However, the Commissioner is hereby authorized to charge any fees required by this submission, or credit any overpayments, to Deposit Account No. 07-1896 referencing the above-identified docket number. A copy of the Transmittal Sheet is enclosed.

Respectfully submitted,

Date: June 9, 2006.


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